PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Aloys Wobben
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Filed	:	April 28, 2005
For	:	SEPARATE NETWORK AND METHOD FOR OPERATING A SEPARATE NETWORK

Examiner	:	Adi Amrany
Art Unit	:	2836
Docket No.	:	970054.471USPC
Date	:	February 17, 2009

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPELLANT'S BRIEF

Commissioner for Patents:

This brief is in furtherance of the Notice of Appeal filed in this case on December 17, 2008. The fees required under Section 41.20(b)(2), and any required request for extension of time for filing this brief and fees therefore (if appropriate), are dealt with in the accompanying papers.

I. REAL PARTY IN INTEREST

The real party in interest is Aloys Wobben, inventor and owner of the present application.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences which directly affect or will be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 1-6, 8-17, 19, 21-23 and 25-35 are pending in the application. Claims 1-6, 8-17, 19, 21-23 and 25-35 stand rejected by the Examiner as noted in the Final Office Action mailed October 14, 2008. Claims 7, 18, 20 and 24 are canceled. The rejections of claims 1-6, 8-17, 19, 21-23 and 25-35 are being appealed.

IV. STATUS OF AMENDMENTS

A Final Office Action was mailed October 14, 2008 (hereinafter "Office Action"). In response to this Office Action, a Notice of Appeal was filed on December 17, 2008. No amendments have been filed in response to the Office Action mailed October 14, 2008.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Isolated electrical or "island" networks are used to supply power to areas that are not connected to a central power supply network but in which renewable energy sources, such as wind, sun, and/or water power, and the like, are available. For example, an island in the ocean, off-shore arctic areas, isolated mountain regions, deserts, or other locations that are isolated from public power supplies may be serviced by isolated electrical networks. The present invention is directed towards sensing changes in power demands in such isolated electrical networks, and methods for controlling the production of power from a variety of different sources, some more environmentally friendly than others.

One key issue is where in the network to sense for changes in power demand. Should the power demand sensing be done at each ac load device? At each power generation device?

The present invention solves this problem by sensing the power demand changes on the dc bus bar 28 and controls all generation of power, whether ac or dc power generation, based on the dc sensor device 29 on the dc bus bar 28.

More particularly, as shown in Figure 3 of the application (reproduced below), the present invention is directed to an isolated electrical network wherein a dc device 29 is connected to a dc bus bar 28 that terminates at inverter 24 to detect a power required in an ac network located on the output side of the inverter 24. As a result of this sensing by the dc device 29 on the dc bus bar 28, the present invention is particularly adapted to recognize a demand for

power or an excess supply of power and compensate accordingly <u>before</u> fluctuations in the network power frequency appear – a feat in direct contrast to prior art network testing methods that detect power frequency in an ac network to determine whether available power corresponds to required power. *See* **5:28-6:7.** [1]

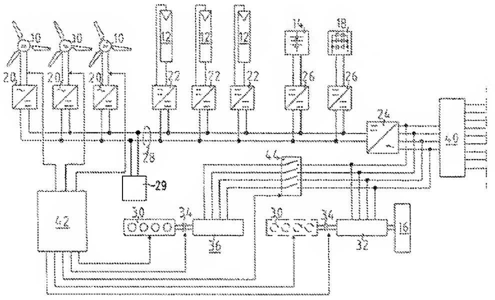

FIG. 3

In operation, the dc device 29 detects via the dc bus bar 28 changes in the demand for power in the ac network and enables a controller 42 (*see* **10:1-3**) to prioritize the generation of available power from various networked power sources to satisfy the detected demand. As shown, these network power sources include not only dc power generators 10 and 12 and intermediate storage devices 14 and 18 connected to the dc bus bar 28, but also ac power generators 32 and 36 and intermediate storage devices 16 connected to the ac network on the output side of inverter 24.

More specifically, when the required power level sensed by the dc device 29 is less than the available power from one or more wind turbines 10 (each having a first power generator), the wind turbines 10 are directed by the controller 42 to provide the required power. The wind turbines 10 being controllable, such as, for example, by varying a blade angle of the wind turbines, in order to permit changes in generated power to correspond to fluctuating loads

[1] For brevity, where specific passages of the specification are cited, they will be indicated, in bold text, by a page number separated from a line number by a colon, *e.g.*, 7:27, indicating page 7, line 27.

on the ac network. Put another way, when certain loads on the ac network are turned off and energy demands fall, the wind turbines 10 are controlled to generate less energy. *See, e.g.*, **7:17-20**. Conversely, when loads are turned on and energy demands rise, the wind turbines 10 are controlled to generate more energy (limited of course by the maximum energy output of the wind turbines at a given time). In this manner, the wind turbines 10 are configured to be the primary energy source of the isolated electrical network. *See, e.g.*, **7:27-8:2**. To increase the capacity of the electrical network, the wind turbines 10 may be supplemented with electrical energy produced by other renewable energy sources, such as, for example, the optional photovoltaic elements 12 shown in Figure 3. *See* **8:16-18**.

To equalize fluctuations of the available power from the isolated electrical network and/or respond to an increased power demand spontaneously and, on the other hand, to be able to use available energy, which is not in demand at the moment, at least one intermediate storage device 14, 18 is coupled to the dc bus bar 28 to store electrical energy and discharge the stored energy quickly on demand. *See* **4:17-21**. As shown in Figure 3, the intermediate storage device may be, for example, an accumulator block 14 or a capacitor block 18 connected via charging/discharging circuits 26. *See* **8:19-9:1**. In addition, an intermediate storage device may also be connected to the ac network, such as, for example, an intermediate storage device in the form of a flywheel 16 coupled a second generator 32.

These intermediate storage devices may be charged when the required demand sensed by the dc device 29 is less than the power available from the wind turbines 10 (and optional photovoltaic elements 12), and conversely, may be discharged when the required demand sensed by the dc device 29 is greater than the power available from the wind turbines 10 (and optional photovoltaic elements 12). In this manner, the intermediate storage devices collectively form a secondary power source capable of supplementing the primary energy source of the wind turbines in response to detected power demands.

Consequently, it is only when the required power detected by the dc device 29 exceeds that available from the wind turbines 10 (and optional photovoltaic elements 12) and the intermediate storage devices 14, 16, 18 that an internal combustion engine 30 is required to drive a second generator 32 to meet such gaps in required power. *See* **7:8-13, 7:21-26**. Accordingly, the time in which the engine 30 must be operated is relatively limited, thus resulting in a particularly environmentally friendly isolated electrical network.

In sum, the unique combination of features of the present invention enables sensing the required power in an ac network with a dc device 29 <u>before</u> fluctuations in the network power frequency appear, thereby enabling the provision of electrical energy to isolated locations in a particularly efficient and reliable manner. The present invention is also particularly environmentally friendly, relying primarily on renewable energy sources (*e.g.*, wind energy) and intermediate storage devices to supply electrical energy while being supplemented only when necessary by energy supplied from one or more internal combustion engines.

Of course, this summary has been provided as a general description of subject matter and does not limit or define the claims or their meaning. The scopes of the respective claims are to be construed by their own terms and not by this summary.

<u>Correlation of Claims and Specification</u>

Hereafter is a concise listing of the independent claims under appeal correlated with subject matter on which each element reads, from the substitute specification and figures. Text in the specification is referenced, in bold type, by page number and line number, separated by a colon. For example, **8:11** refers to text beginning at page 8, line 11. This listing is provided as required under 37 CFR § 41.37(c)(1)(v) for the purpose of simplifying review of the claims and subject matter. It is not to be construed as limiting the claims to the specific subject matter referenced, nor to the embodiments disclosed in the specification.

1. An isolated electrical network **(8:11)**, comprising:

at least one first power generator coupled to a wind turbine (collectively 10, **8:12-13**, Fig. 3) to produce electrical power;

at least one intermediate storage device (14, 18, **8:19-27**, Fig. 3) to store electrical power coupled to the first power generator (Fig. 3);

a second generator (32, **9:6-9**, Fig. 3) coupled to an internal combustion engine (30, **9:13-24**, Fig. 3);

a direct current (dc) bus bar (28, **5:16-20**, Fig. 3) to feed the electrical power from the first power generator (generator of 10, **8:12-13**, Fig. 3) and the intermediate storage device (14, 18, **8:19-27**, Fig. 3) into an ac (alternating current) network (output side of inverter 24, Fig.

3), power flow being unidirectional from the dc bus bar (28, **5:16-20**, Fig. 3) to the ac network (output side of inverter 24, Fig. 3);

a dc device (29, **6:4-7; 12:between 16 and 17** (as inserted in an amendment filed August 11, 2008, Fig. 3) coupled to the dc bus bar (28, **5:16-20**, Fig. 3) to detect the electrical power required in the ac network (output side of inverter 24, Fig. 3); and

a controller (42, **10:1-3**, Fig. 3) operable to:

control electrical power provided by the wind turbine (10, **8:12-13**, Fig. 3) that is delivered to the ac network (output side of inverter 24, Fig. 3) in response to the required electrical power in the ac network detected on the direct current bus bar (28, **5:16-20**, Fig. 3) by the dc device (29, **6:4-7; 12:between 16 and 17** (as inserted in an amendment filed August 11, 2008, Fig. 3) being less than the electrical power generated by the first power generator (**3:27-4:2**, **7:18-23**);

control the electrical power provided by the intermediate storage device (14, 18, **8:19-27**, Fig. 3) that is delivered to the ac network (output side of inverter 24, Fig. 3) in response to the required electrical power in the ac network detected on the direct current bus bar (28, **5:16-20**, Fig. 3) by the dc device (29, **6:4-7; 12:between 16 and 17** (as inserted in an amendment filed August 11, 2008, Fig. 3) being greater than the electrical power generated by the first power generator (**10:7-12**); and

control electrical power provided by the second generator (32, **9:6-9**, Fig. 3) coupled to the internal combustion engine (30, **9:13-24**, Fig. 3) that is delivered to the ac network in response to the detected electrical power required in the ac network detected on the direct current bus bar (28, **5:16-20**, Fig. 3) by the dc device (29, **6:4-7; 12:between 16 and 17** (as inserted in an amendment filed August 11, 2008, Fig. 3) being greater than the electrical power generated by the first power generator and provided by the intermediate storage device (**9:13-17**, **10:17-19**).

19. A method for operation control of an isolated electrical network (**8:11**), the method comprising:

detecting electrical power required in an alternating current (ac) network (output side of inverter 24, Fig. 3) with a dc device (29, **6:4-7; 12:between 16 and 17** (as inserted in an amendment filed August 11, 2008, Fig. 3) coupled to a dc bus bar (28, **5:16-20**, Fig. 3);

generating electrical power with at least one first generator (generator of 10, **8:12-13**, Fig. 3) electrically coupled to the dc bus bar (28, **5:16-20**, Fig. 3) and driven by at least one wind-power station (10, **8:12-13**, Fig. 3) the power flow being unidirectional from the dc bus bar (28, **5:16-20**, Fig. 3) to the network (output side of inverter 24, Fig. 3);

coupling the ac network (output side of inverter 24, Fig. 3) with the at least one first generator (generator of 10, **8:12-13**, Fig. 3) driven by the at least one wind-power station (10, **8:12-13**, Fig. 3) if consumption of the electrical power in the ac network is less than an electrical energy generation capacity of the wind-power station (**3:27-4:2**, **7:18-23**);

coupling the ac network (output side of inverter 24, Fig. 3) with the at least one first generator (generator of 10, **8:12-13**, Fig. 3) driven by the at least one wind-power station (10, **8:12-13**, Fig. 3) and at least one electrical intermediate storage device (14, 16, 18, **8:19-27, 9:10-12**, Fig. 3) if consumption of the electrical power in the ac network as detected on the dc bus bar (28, **5:16-20**, Fig. 3) by the dc device (29, **6:4-7; 12:between 16 and 17** (as inserted in an amendment filed August 11, 2008, Fig. 3) is less than the generated electrical power of the first generator and a stored energy capacity of the electrical intermediate storage device (**10:7-12**); and

coupling the ac network (output side of inverter 24, Fig. 3) with the at least one first generator (generator of 10, **8:12-13**, Fig. 3) driven by the at least one wind-power station (10, **8:12-13**, Fig. 3), with the at least one electrical intermediate storage device (14, 16, 18, **8:19-27, 9:10-12**, Fig. 3), and with at least one second generator (32, **9:6-9**, Fig. 3) driven by at least one internal combustion engine (30, **9:13-24**, Fig. 3) if consumption of the electrical power in the ac network as detected on the dc bus bar (28, **5:16-20**, Fig. 3) by the dc device (29, **6:4-7; 12:between 16 and 17** (as inserted in an amendment filed August 11, 2008, Fig. 3) is greater than the generated electrical power of the first generator and provided power of the electrical intermediate storage device (**9:13-17, 10:17-19**).

There are no means plus function elements in the independent claims or in any of the dependent claims being argued separately below. Accordingly the provisions of 37 C.F.R. § 41.37(c)(1)(v), pertaining to means plus function elements, do not apply.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. The rejection of claims 1, 3-5, 8-10, 19, 21-23, 26-27, 29, 31 and 34-35 under 35 U.S.C. § 103(a) as being unpatentable over Wichert ("PV-Diesel Hybrid Energy Systems for Remote Area Power Generation – A Review of Current Practice and Future Developments") in view of Da Ponte (U.S. Patent No. 6,175,217).

2. The rejection of claims 2, 11-14, 16-17, 25, 28, 30 and 32-33 under 35 U.S.C. § 103(a) as being unpatentable over Wichert in view of Da Ponte and De Zeeuw ("On the Components of a Wind Turbine Autonomous Energy System").

3. The rejection of claims 6 and 31 under 35 U.S.C. § 103(a) as being unpatentable over Wichert in view of Da Ponte and Jaunich (U.S. Patent No. 6,605,880).

4. The rejection of claim 15 under 35 U.S.C. § 103(a) as being unpatentable over Wichert in view of Da Ponte and Offringa (European Patent No. EP 046,530 A1).

VII. ARGUMENT

A. Nonobviousness under Section 103

The Federal Circuit has held many times that to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). Moreover, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

B. Rejection of Claims 1, 3-5, 8-10, 19, 21-23, 26-27, 29, 31 and 34-35 under 35 U.S.C. § 103(a) over Wichert in view of Da Ponte

Independent Claim 1 and Dependent Claims Thereof

The invention recited in independent claim 1 is not obvious in view of Wichert and Da Ponte. The Examiner admitted that Wichert does not explicitly disclose a dc device to detect the electrical power required in the ac network as recited in claim 1 by asserting on page 3

of the Office Action that such a dc device is inherent. Applicant agrees that a dc device to detect the electrical power required in the ac network is not explicitly disclosed in Wichert, but respectfully disagrees with the assertion that such a dc device is inherently disclosed.

"To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted); *see also* MPEP § 2112.

Claim 1 recites, *inter alia*, "a dc device coupled to the dc bus bar to detect the electrical power required in the ac network." A <u>dc device</u> operable to detect the electrical power required in the <u>ac network</u> is by no means necessarily present in the wind-diesel hybrid energy systems described in Wichert, and therefore can <u>not</u> be an inherent feature of such systems.

The Office Action asserts in particular that in order to calculate the "net load" (citing Wichert, page 218-19), it is inherent that Wichert includes <u>a device</u> for detecting the electrical power required in the network. Office Action, page 4. Even assuming a device for detecting a net load is present, such a device would not necessarily be a <u>dc device</u>, nor would it necessarily detect the electrical power required in an <u>ac network</u>. For example, a detecting device could be connected directly to the ac network to detect the power frequency of that network in order to determine power requirements. As another example, the Office Action suggests that an "ac device would be able to detect power required in a dc circuit." Office Action, page 5, lines 19-20. The existence of such alternative arrangements of the allegedly inherent detecting device of Wichert makes it clear that such a device, even if present, is not necessarily a <u>dc device</u> for detecting the electrical power required in an <u>ac network</u>. Accordingly, the recited feature of "a dc device … to detect the electrical power required in the ac network" is not necessary present, and therefore is not inherently disclosed in Wichert. Rather, the dissection of the energy system shown in Figures 1 and 4 of Wichert to a number of so-called "embodiments" (see Office Action, page 5, line 13 through page 6, line 2) in an attempt to show that the a dc device <u>could possibly be</u> (but not necessarily) present to detect power required in an ac network is more characteristic of the impermissible use of hindsight based on

Applicant's disclosure to arrive at the claimed invention. Accordingly, for at least this reason, independent claim 1 and all dependent claims thereof are allowable over Wichert.

The Office Action further asserts that Da Ponte discloses a "dc device (16; col. 4, lines 26-45) coupled to the dc bus bar to detect the power required in the ac network (col. 5, lines 5-57)." Office Action, page 5. Applicant respectfully disagrees.

The alleged dc device in Da Ponte is a measurement and control circuit 16 which utilizes a signal from a voltage sensor 18 to stabilize a voltage of the system. While there may be some interdependence between the sensed voltage and a load on the system, there is no explicit or inherent disclosure of a dc device coupled to a dc bus bar to <u>detect power required in an ac network</u>.

Accordingly, for at least this reason, independent claim 1 and all dependent claims thereof are also allowable over Da Ponte.

Furthermore, the Examiner admitted on page 4 of the Office Action that Wichert does not expressly disclose unidirectional flow from the dc bus bar to the ac network as recited in claim 1. To supply this missing teaching of Wichert, the Examiner has cited Da Ponte.

However, even assuming that Da Pont discloses a system with unidirectional flow from a dc bus bar to an ac network, modifying the hybrid energy system of Wichert shown in Figures 1 and 4 by effectively replacing the bi-directional inverter with a unidirectional element would change a basic principle of operation of that system. More specifically, the Wichert system shown in Figures 1 and 4 includes several dc power sources connected to a dc bus and an ac power source connected to an ac bus. A bi-directional inverter allows for supplying the dc and ac loads with ac and dc power respectfully (*i.e.*, the system features bi-directional power flow). *See* Figure 4 of Wichert, reproduced immediately below.

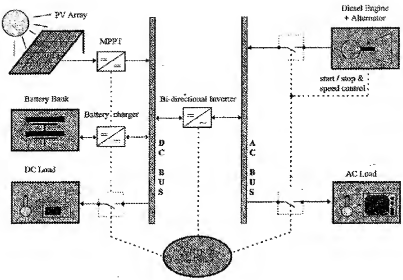

Fig. 4 Parallel PV-diesel hybrid energy system.

Replacing the bi-directional inverter to only allow unidirectional power flow would essentially cut off the ac power source from supplying the dc load, or likewise, cut off the dc power source from supplying the ac load. Accordingly, the proposed modification would result in a basic change in the principle in which that system is shown to operate (*i.e.*, bi-directional power flow wherein ac power sources can supply dc loads and dc power sources can supply ac loads), the proposed modification therefore being insufficient to render claim 1 obvious. *See In re Ratti*, 270 F.2d at 813. Rather, modifying the system of Wichert to, among other things, eliminate the dc loads, replace the bi-directional inverter with a unidirectional element and add a dc device to detect power required in an ac network to arrive at the system of claim 1 is a result of the impermissible use of hindsight using Applicant's disclosure as a blueprint.

Accordingly, for this additional reason, claim 1 and all dependent claims thereof are allowable over Wichert and Da Ponte.

Independent Claim 19 and Dependent Claims Thereof

Although the language and scope of independent claim 19 differs from that of independent claim 1, the allowability of claim 19 will be apparent in view of the above discussions.

For example, claim 19 recites, *inter alia*, "detecting electrical power required in an alternating current (ac) network with a dc device coupled to a dc bus bar." As previously

explained above, neither Wichert nor Da Ponte teach or suggest a <u>dc device</u> coupled to a dc bus bar to detect power required in an <u>ac network</u>, and thus, fail to render claim 19 obvious.

As another example, claim 19 recites, *inter alia*, "generating electrical power with at least one first generator electrically coupled to the dc bus bar and driven by at least one wind-power station the <u>power flow being unidirectional</u> from the dc bus bar to the network." As previously explained above, modifying the bi-directional power flow system of Wichert with the alleged teaching of Da Ponte regarding unidirectional power flow would fundamentally change a basic principle of operation of that system, and therefore, the proposed modification fails to provide a sufficient basis to render claim 19 obvious.

Accordingly, independent claim 19 and all dependent claims thereof are allowable over Wichert and Da Ponte.

C. Rejection of claims 2, 11-14, 16-17, 25, 28, 30 and 32-33 under 35 U.S.C. § 103(a) over Wichert in view of Da Ponte and De Zeeuw

Wichert, Da Ponte and De Zeeuw do not teach or suggest the invention recited in claims 2, 11-14, 16-17, 25, 28, 30 and 32 -33 which depend from claim 1. In particular, De Zeeuw does not teach or suggest the features of claim 1 that are missing from Wichert and Da Ponte. For example, De Zeeuw does not teach or suggest a dc device coupled to a dc bus bar to detect the electrical power required in an ac network, as recited in claim 1. Instead the Office Action has cited De Zeeuw only for allegedly teaching elements unrelated to the missing teachings of Wichert and Da Ponte. As such, Wichert, Da Ponte and De Zeeuw fail to teach the invention of claims 2, 11-14, 16-17, 25, 28, 30 and 32-33 which depend from claim 1. Thus, claims 2, 11-14, 16-17, 25, 28, 30 and 32-33 are nonobvious in view of Wichert, Da Ponte and De Zeeuw.

D. Rejection of claims 6 and 31 under 35 U.S.C. § 103(a) over Wichert in view of Da Ponte and Jaunich

Wichert, Da Ponte and Jaunich do not teach or suggest the invention recited in claims 6 and 31 which depend from claim 1. In particular, Jaunich does not teach or suggest the features of claim 1 that are missing from Wichert and Da Ponte. For example, Jaunich does not teach or suggest a dc device coupled to a dc bus bar to detect the electrical power required in an ac network, as recited in claim 1. Instead the Office Action has cited Jaunich only for allegedly

teaching elements unrelated to the missing teachings of Wichert and Da Ponte. As such, Wichert, Da Ponte and Jaunich fail to teach the invention of claims 6 and 31 which depend from claim 1. Thus, claims 6 and 31 are nonobvious in view of Wichert, Da Ponte and Jaunich.

E. Rejection of claim 15 under 35 U.S.C. § 103(a) over Wichert in view of Da Ponte and Offringa

Wichert, Da Ponte and Offringa do not teach or suggest the invention recited in claim15 which depends from claim 1. In particular, Offringa does not teach or suggest the features of claim 1 that are missing from Wichert and Da Ponte. For Example, Offringa does not teach or suggest a dc device coupled to a dc bus bar to detect the electrical power required in an ac network, as recited in claim 1. Instead the Office Action has cited Offringa only for allegedly teaching elements unrelated to the missing teachings of Wichert and Da Ponte. As such, Wichert, Da Ponte and Offringa fail to teach the invention of claim 15 which depends from claim 1. Thus, claim 15 is nonobvious in view of Wichert, Da Ponte and Offringa.

Respectfully submitted,
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VIII. CLAIMS APPENDIX

1. An isolated electrical network, comprising:

at least one first power generator coupled to a wind turbine to produce electrical power;

at least one intermediate storage device to store electrical power coupled to the first power generator;

a second generator coupled to an internal combustion engine;

a direct current (dc) bus bar to feed the electrical power from the first power generator and the intermediate storage device into an ac (alternating current) network, power flow being unidirectional from the dc bus bar to the ac network;

a dc device coupled to the dc bus bar to detect the electrical power required in the ac network; and

a controller operable to:

control electrical power provided by the wind turbine that is delivered to the ac network in response to the required electrical power in the ac network detected on the direct current bus bar by the dc device being less than the electrical power generated by the first power generator;

control the electrical power provided by the intermediate storage device that is delivered to the ac network in response to the required electrical power in the ac network detected on the direct current bus bar by the dc device being greater than the electrical power generated by the first power generator; and

control electrical power provided by the second generator coupled to the internal combustion engine that is delivered to the ac network in response to the detected electrical power required in the ac network detected on the direct current bus bar by the dc device being greater than the electrical power generated by the first power generator and provided by the intermediate storage device.

2. The isolated electrical network according to claim 1 wherein the first power generator includes:

a synchronous generator; and

a converter with a dc voltage intermediate circuit having at least one first rectifier and an inverter.

3. The isolated electrical network according to claim 1 wherein the intermediate storage device includes:

at least one electrical element coupled to a dc voltage intermediate circuit.

4. The isolated electrical network according to claim 3 wherein the electrical element includes at least one selected from a group consisting of a photovoltaic element, a mechanical energy storage device, an electrochemical storage device, a capacitor, and a chemical storage device.

5. The isolated electrical network according to claim 1, further comprising:

a flywheel coupled to at least one of the second generator and a third generator.

6. The isolated electrical network according to claim 1, further comprising:

a plurality of internal combustion engines wherein each of the plurality of internal combustion engines is operable to be coupled to a generator.

7. (Canceled)

8. The isolated electrical network according to claim 3, further comprising:

a boost/buck converter coupled between the electrical element and the dc voltage intermediate circuit.

9. The isolated electrical network according to claim 2, further comprising:

charging/discharging circuits coupled between the intermediate storage device and the dc voltage intermediate circuit.

10. The isolated electrical network according to claim 1, further comprising:

a flywheel coupled to a generator and a downstream rectifier to supply electrical energy into the isolated electrical network.

11. The isolated electrical network according to claim 1, further comprising:

at least one additional power generator coupled to a corresponding renewable energy source wherein each of the first power generator, the second generator and the additional power generator is operable to use renewable energy sources, the at least one intermediate storage device operable to power a common dc voltage intermediate circuit.

12. The isolated electrical network according to claim 2, wherein the inverter includes:

a network-commutated inverter.

13. The isolated electrical network according to claim 1, further comprising;

an electromagnetic coupling operable to couple the second generator and the internal combustion engine, wherein energy to operate the electromagnetic coupling is made available by an electrical storage device and/or by a primary power generator.

14. The isolated electrical network according to claim 1, further comprising:

a seawater desalination/service water generation plant, wherein the generation plant generates service water and drinking water in response to the electrical power supplied by the first power generator being greater than power consumption of other electrical loads coupled to the isolated electrical network.

15. The isolated electrical network according to claim 1, further comprising:

a pump storage device operable to receive electrical energy from the first power generator when the electrical power supplied by the first power generator is greater than power consumption of other electrical loads coupled to the isolated electrical network.

16. The isolated electrical network according to claim 1 wherein the second generator comprises: a synchronous generator operable as a network generator, wherein the synchronous generator operates in a motor mode with energy required from the first power generator.

17. The isolated network according to claim 16 wherein the synchronous generator is coupled to the internal combustion engine, and wherein the synchronous generator is deactivated when the electrical power of the first power generator is greater than or approximately the same as electrical power consumption in the isolated electrical network.

18. (Canceled)

19. A method for operation control of an isolated electrical network, the method comprising:

detecting electrical power required in an alternating current (ac) network with a dc device coupled to a dc bus bar;

generating electrical power with at least one first generator electrically coupled to the dc bus bar and driven by at least one wind-power station the power flow being unidirectional from the dc bus bar to the network;

coupling the ac network with the at least one first generator driven by the at least one wind-power station if consumption of the electrical power in the ac network is less than an electrical energy generation capacity of the wind-power station;

coupling the ac network with the at least one first generator driven by the at least one wind-power station and at least one electrical intermediate storage device if consumption of the electrical power in the ac network as detected on the dc bus bar by the dc device is less than the generated electrical power of the first generator and a stored energy capacity of the electrical intermediate storage device; and

coupling the ac network with the at least one first generator driven by the at least one wind-power station, with the at least one electrical intermediate storage device, and with at least one second generator driven by at least one internal combustion engine if consumption of the electrical power in the ac network as detected on the dc bus bar by the dc device is greater

than the generated electrical power of the first generator and provided power of the electrical intermediate storage device.

20. (Canceled)

21. The method according to claim 19, further comprising operating the at least one internal combustion engine to drive the at least one second generator if power delivered by power generators using renewable energy sources and the provided power of the at least one electrical intermediate storage device fall below a defined threshold for a defined period of time.

22. The method according to claim 19, further comprising:

charging the at least one electrical intermediate storage device from the at least one wind-power station when more energy is generated by the at least one wind-power station than is required for a load on the isolated electrical network.

23. The method according to claim 19, further comprising:

delivering energy from the electrical intermediate storage device to overcome frequency instabilities or deviations in the isolated electrical network power frequency from a desired value.

24. (Canceled)

25. The isolated electrical network according to claim 1 wherein the second generator comprises: a synchronous generator to serve as a network generator for a network-commutated inverter to feed an alternating current into the isolated electrical network, the synchronous generator operable to work in motor operation and a drive of the synchronous generator realizable by providing at least one of energy from a flywheel and electrical energy from a renewable-energy power generator.

26. The isolated electrical network according to claim 1, wherein in response to the output electrical power of the first power generator being greater than a power of a load required in the ac network, electrical energy of the first generator is supplied to the intermediate storage device if the intermediate storage device is not fully charged.

27. The isolated electrical network according to claim 1 wherein the first power generator is coupled to a wind-power station.

28. The isolated electrical network according to claim 27 wherein the wind-power station is controlled by at least one of a rotational speed of the wind turbine and a position of a blade.

29. The isolated electrical network according to claim 1 wherein the intermediate storage device is at least one of an accumulator block type and a battery storage device.

30. The isolated electrical network of claim 12, further comprising a distributor coupled to an output side of the network-commutated inverter.

31. The isolated electrical network of claim 1, further comprising a third generator coupled to an internal combustion engine.

32. The isolated electrical network of claim 31, further comprising an electromagnetic coupling operable to couple the third generator to the internal combustion engine.

33. The isolated electrical network of claim 31 wherein the third generator comprises a synchronous generator separated from the isolated electrical network via a switching device.

34. The isolated electrical network of claim 1 wherein the at least one intermediate storage device includes a flywheel device.

35. The isolated electrical network of claim 1 wherein the at least one intermediate storage device includes a capacitor.

IX. EVIDENCE APPENDIX

None.

X. <u>RELATED PROCEEDINGS APPENDIX</u>

None.

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